



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/725,391	12/03/2003	Fabio deWitt	12M-40 US	5008
25319	7590	11/17/2005	EXAMINER	
FREEDMAN & ASSOCIATES 117 CENTREPOINTE DRIVE SUITE 350 NEPEAN, ONTARIO, K2G 5X3 CANADA			GRAY, LINDA L	
			ART UNIT	PAPER NUMBER
			1734	
DATE MAILED: 11/17/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/725,391	<b>Applicant(s)</b> DEWITT, FABIO	
	<b>Examiner</b> Linda L. Gray	<b>Art Unit</b> 1734	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**Detailed Action**

**Claim Rejections - 35 USC 103**

**1.** The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

**2. Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Green (US 5,733,643) in view of Lai and Fedtech (both of IDS filed 3-26-04).**

**Claims 1 and 11,** Green teaches a process for making a ceramic armor plate (c 7, L 7-18) including the following steps:

**(a)** affixing a plurality of ceramic armor tiles side-by-side to form a fixed layer 24 of ceramic armor tiles having a known two-dimensional size (c 6, L 11-25), and

**(b)** forming various sized ceramic armor plates therefrom.

**Claims 1 and 11,** *Green does not teach how the substrate (which includes layer 24) is formed into the plates, i.e., does not teach using an abrasivejet cutter to cut continuously through the substrate.*

However, Lai teaches forming a substrate into various shaped armor pieces using an abrasive waterjet because cutting in this manner allows for unlimited directions of cutting such as curves, corners, and holes; and, Fedtech teaches using such a cutter to armor materials, such as ceramics specifically.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have provided in Green a specific method for how the substrate, which includes layer 24, is formed into the plates, i.e., using an abrasivejet cutter to cut continuously through the substrate, because Lai teaches forming a substrate into various shaped armor pieces using an abrasive waterjet and that cutting in this manner allows for unlimited directions of cutting such as

curves, corners, and holes; and, Fedtech teaches using such a cutter to armor materials, such as ceramic specifically.

With respect to the limitation of cutting at least two adjacent tiles, the structure of Green modified would provide for cutting at least two adjacent tiles when there are present curves (**claims 8 and 15**) and/or straight lines (**claims 7, 11, and 14**) along the cut lines when forming, for example, the body armor of Green.

**Claim 2 and the rest of claim 11**, layer 24 is affixed to backing element 38 via layer 22 where Green indicates the layers to be bonded together (c 2, L 45-54; c 6, L 11-25) such that layer 22 is considered to have an adhesive action on layer 24. **Claim 3 and the rest of claim 11**, Green indicates processing the entire substrate such that cutting in Green will be through element 38 also.

***Claim 4**, Green does not teach applying adhesive between the tiles.*

However, it is conventional to provide adhesive between adjacent items of an armored material to help keep the tiles from separating and therefore hindering the armor's protective ability, and for this reason it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have provided for such in Green.

***Claims 5-6 and 12-13**, Green teaches forming a plurality of various sized plates but not necessarily from the same substrate in a nested position, i.e., that the formed plates have a size smaller than that of the substrate.*

However, Lai teaches making a plurality of armor pieces from one substrate in a nested position, and it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have provided in Green forming the plurality of plates from the same substrate in a nested position because Lai teaches such to be known in the art where the formation of many substrates from the same substrate will maximize use of the substrate and eliminate waste of viable armor material where the cut plates have different sizes.

***Claims 9-10 and 16-17**, Green does not teach the claimed tile dimension, of 4 in by 4 in (claims 9 and 16) or 3 in by 3 in (claims 10 and 17).*

However, MPEP § 2144.05 indicates that where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation, *In re Aller*, 220 F.2d 454, 105 U.S.P.Q. 233, 235 (CCPA 1955), and it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have provided in Green the optimum and/or workable ranges for the tile dimensions to

ensure the best armor protection possible, i.e., the tile size is a result-effective variable where such can be changed to effect proper tile placement for required protection.

**Response to Arguments**

**3.** Applicant's arguments filed 9-2-05 have been fully considered.

*Applicant argues for claims 1 and 11 that there is no motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art at the time the invention was made, to combine the teachings of Green with that of Lai and Fedtech.*

In response, the motivation is provided in the Office action on page 2, last paragraph.

*Applicant indicates that Green's recited use of molds or forms (c 5, L 52-60) in the manufacturing process would suggest strongly to one of ordinary skill in the art that the barrier materials are fabricated directly into different shapes and configurations depending upon the intended use of the final product so that Green does not teach or even suggest that "various sized" armor plates are cut from the barrier material once it has been formed. Also, Applicant indicates that Green does not mention at any point in the reference the concept of cutting or otherwise shaping or processing the barrier material once it is formed. Applicant indicates that Green does not mention at any point in the reference the concept of cutting or otherwise shaping or processing the barrier material once it is formed.*

In response, column 5, lines 52-60, of Green is noted. Green teaches in column 7, lines 7-18, that the barrier material that Applicant references is made according to various embodiments mentioned in the reference, such as that discussed in column 5, lines 52-60. Then Green recites that these barrier materials which are made by these processes are then fabricated into different products. Specifically, Green recites "In their various forms, the composite barrier materials of each of these embodiments is produced in accordance with the process as described above and each can be fabricated into many products. Specifically, the barrier material of each of the above described embodiments may be used to produce bullet and/or trauma resistant body armor . . ." (underlining added by examiner for emphasis and not part of Green reference).

*Applicant argues that Lai does not teach or suggest cutting various sized armor plates from a fixed layer formed by affixing a plurality of armor tiles side by side.*

In response, Lai is not provided to teach the limitation of a fixed layer formed by affixing a plurality of armor tiles side by side. This limitation is taught by the primary reference, Green. Lai is provided to teach forming a substrate into various shaped armor pieces using an abrasive waterjet.

*Applicant's comment with respect to column 6, lines 31-35, is noted.*

In response, post-adhesion cutting of the ceramic tiles is not considered to be part of the process of attaching because the tiles are already completely bonded. In any event, Green does

not place restrictions on the post-adhesion process that is performed to form the various plates as indicated in column 7, lines 7-18. Green teaches in column 6, lines 31-45, using an "extremely strong" adhesive to bond the tiles such that the tiles will remain in place when subject to a massive disruptive force from high impact projectiles. The cutting indicated by Lai is not of an impact higher than that disclosed by Green such that it is not considered to be harmful to the barrier material of Green. Actually, Lai teaches cutting very thin sheets smoothly and cleanly, such as sheets being only 0.82 inches thick.

*With respect to Applicant's comment to the rejection of claims 3 and 11:* Green teaches that the entire structure in Figure 2 is part of the final armor plate such that in Green modified by Lai and Fedtech, layer 38 will be processed with the ceramic tiles on top.

*With respect to Applicant's comment to the rejection of claims 5-6 and 12-13:* Green does teach forming a plurality of plates such as bullet resistant body armor, face masks, helmets, windows, riot shields, doors, and walls; panels for motor vehicles, boats, aircraft, personnel machinery, electronics, and computers. What Green does not teach is that various panels can be made for a single substrate which is suggested by Lai.

### **Conclusion**

**4. THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

**5.** Any inquiry concerning this communication or earlier communications from the examiner should be directed to Linda Gray whose telephone number is (571) 272-1228. The examiner can normally be reached Monday-Friday from 9:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Fiorilla, can be reached at (571) 272-1187. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

**Art Unit: 1734**

system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

llg

November 14, 2005

*Linda P. Gray*  
LINDA GRAY  
PRIMARY EXAMINER